CLAIMS

1. MSM type photo-detection device designed
to detect incident light and comprising reflecting
means (2, 52, 82) superposed on a first face of a
support (1, 51, 81) to form a first mirror for a Fabry-
Pérot type resonant cavity, a layer of material (3, 53,
83) that does not absorb said light, an active layer
(4, 54, 84) made of a semiconducting material absorbing
incident light and a network of polarization electrodes
collecting the detected signal, the electrodes network
(5, 62) being arranged on the active layer, the
electrodes network being composed of parallel
conducting strips at a uniform spacing at a period less
than the wavelength of incident light, the electrodes
network (5, 62) forming a second mirror for the
resonant cavity, the optical characteristics of this
second mirror being determined by the geometric
dimensions of said conducting strips, the distance
separating the first mirror from the second mirror
being determined to obtain a Fabry-Pérot type resonance
for incident light between these two mirrors.

2. Photo-detection device according to
claim 1, characterized in that the reflecting means
forming a first mirror are composed of a Bragg mirror
(2, 52).

3. Photo-detection device according to
claim 2, characterized in that the Bragg mirror (2, 52)
is composed of alternating layers of AlAs and AlGaAs
d'AlAs and alternating layers of GaInAsP and InP or

alternating layers of AlGaInAs and AlInAs or alternating layers of AlGaAsSb and AlAsSb.

4.   Photo-detection device according to claim 1, characterized in that the reflecting means forming a first mirror are composed of a metallic layer (82).

5.   Photo-detection device according to claim 4, characterized in that the metallic layer (82) forming the first mirror provides a silver, gold or aluminium surface to incident light.

6.   Photo-detection device according to claim 1, characterized in that the reflecting means forming a first mirror are composed of a multilayer dielectric mirror.

7.   Photo-detection device according to claim 1, characterized in that the layer of material (3, 53, 83) that does not absorb light is made of $Al_xGa_{1-x}As$ and the active layer (4, 54, 84) is made of GaAs.

8.   Photo-detection device according to claim 7, characterized in that x is of the order of 0.35.

9.   Photo-detection device according to claim 1, characterized in that the layer of material (3, 53, 83) that does not absorb light is made of

AlInAs and the active layer (4, 54, 84) is made of
InGaAs.

10.   Photo-detection device according to
claim 1, characterized in that the electrodes network
(5, 62) forms two interdigitated combs.

11.   Photo-detection device according to
claim 1, characterized in that the electrodes network
(5, 62) is composed of said conducting strips that are
adjacent to each other and connected in floating
potential.

12.   Photo-detection device according to
claim 1, characterized in that the conducting strips
are made of silver or gold or aluminium.

13.   Photo-detection device according to
claim 1, characterized in that a passive layer of
dielectric material is deposited on the electrodes
network.

14.   Photo-detection device according to
claim 13, characterized in that the passivation layer
is made of silicon dioxide or silicon nitride.

15.   Photo-detection device according to
claim 1, characterized in that a second face of the
support supports an electrode to apply an electrical
field to the device to change the resonant wavelength
of the resonant cavity by the opto-electric effect.